NEW RECORD OF MUSHROOM PEST AT 5500 FEET ALTITUDE IN KUMAON HILLS OF CENTRAL HIMALAYA

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MUSHROOM IS an alternate source of good quality protein (20-35% dry weight basis) which is higher than in vegetables and fruits. It contains two essential amino acids, lysine and tryptofan, which are deficient in cereals, vitamin C and vitamins of B complex group (thiamine, riboflavin and niacin), Potassium, Phosphorus, Sodium and Iron. Furthermore it is low calorie food with very little fat. Besides, it has medicinal values. Out of 2000 species of edible mushrooms about 80 species have been grown experimentally and 20 species are cultivated commercially. Three varieties *viz.*, white button, oyster and paddy straw, are cultivated in India in commercial scale (Chadha and Sharma, 1995). Button mushroom (*Agaricus bisporus*) and oyster (*Pleurotus sajor caju*) are two important widely and commercially grown in hilly areas of Uttar Pradesh.

Mushrooms are infested by 14 insect and three non-insect pests both in temperate and tropical conditions in India. These are six dipteran flies *viz.*, Sciarid flies *Bradysia paupera* Toum on white button mushroom in Himachal Pradesh (Shandilya *et al,* 1975), *Bradysia tritici* Coq on white button mushroom in Punjab (Sandhu and Brar, 1980) and *Lycoriella auripila* Winn on oyster mushroom in West Bengal (Chakravarty *et al,* 1987); Phorid flies – unidentified phorid flies on white button mushroom in Himachal Pradesh (Shandilya *et al,* 1975), *Megaseliya agarica* Litner (= *Megaselia sandhui* Disney) on button mushroom in Punjab (Disney, 1981) and *Megaselia* sp. to oyster mushroom in Tamil Nadu (Krishnamoorthy *et al,* 1991); Cecid fly larvae of *Heteropezina cathistes* on oyster mushroom in Haryana (Johal *et al,* 1992); four collembolan insects *viz., Lepidocyrtus* sp. and *Xenylla* sp. on beds of button mushroom in Delhi (Bahl *et al,* 1981), *Lepidocyrtus* sp. to button and oyster mushrooms in Himachal Pradesh (Thapa and Seth, 1983), *L. cyaneus* Talb at Udaipur-Rajasthan (Bhandari and Singh, 1983) and *Seira iricolor* Yoshii and Asharaf on oyster mushroom and tropical mushrooms (Gill and Sandhu, 1994); three Coleopteran insects *viz., Staphylinus* sp. on oyster mushroom in Kerala (Asari *et al,* 1991), *Cyllodes whiteii* sp.n., on oyster mushroom in Chandigarh (Johal *et al,* 1992) and *Hexarthrius davisoni* Waterh on oyster mushroom (*P. ostreatus*) at 9000 feet altitude in Garhwal hills of Central Himalaya (Arif *et al,* 1991); one unidentified lepidopteran insect in Himachal Pradesh (Thapa, 1977; Thapa and Seth, 1982), *Bakerdinia* sp. on white button mushroom in Punjab (Gill *et al,* 1988), *Tyrophagous putrescentinae* Schrank in West Bengal (Anon, 1974), in Delhi and Himachal Pradesh (Bahl *et al,* 1981 and Thapa and Seth, 1982). Larvae of *Sciara* sp. *orientalis* Blum (Sciaridae) were observed damaging mycelium and stalk of button mushroom (*Agaricus bisporus*) grown in wooden cases and oyster mushroom (*Pleurotus sajor caju*) grown in polythene bags and larvae of Staphylinid beetles on mycelium and gills of button mushroom in Defence Agricultural Research Laboratory, Pithoragarh situated at 5500 feet in Kumaon hills of Central Himalaya. Larvae of sciarid flies

were cryptic amongst the mycelium and thus it was not easy to isolate them unless they moved under the microscope. The damage is noticed after the appearance of adult flies, which are poor fliers. Flies are dull black in colour with 1.5-2.0mm size. The damage by staphylinid beetles was noticed after hole formation in gills and appearance of adult beetles.

The heavy infestation of Sciarid flies to button and oyster mushroom reduces the size and gives an unattractive brownish colour to the mushroom body. Adult flies usually live under loose soil and side walls of wooden cases whereas during watering the flies can be seen apparently on mushroom body. This seems to be the first record of *Sciara* sp. *orientalis* on mushroom at 5500 feet in Kumaon hills of Central Himalaya.

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